OPERATING INSTRUCTIONS

JVC

COLOUR TELEVISION

AV-24WT2/4EN
AV-28WT2/4EN

Natural Vision

CONTENTS

Locations of remote control buttons.....2
Locations of TV buttons and parts.....3

PREPARATION AND BASIC OPERATION 4
SOUND AND PICTURE 10
OTHER FEATURES 12
TELETEXT 15
OTHER PREPARATION 17
TROUBLESHOOTING 22
SPECIFICATIONS 24

INSTRUCTIONS

Thank you for purchasing this JVC colour television.
To ensure your complete understanding, please read this manual thoroughly before operation.

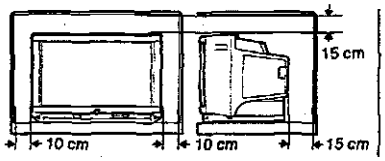
WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:

TO ENSURE PERSONAL SAFETY, OBSERVE THE FOLLOWING RULES REGARDING THE USE OF THIS UNIT.

1. Operate only from the power source specified (AC 220 ~ 240 V, 50 Hz) on the unit.
2. Avoid damaging the AC plug and power cord.
3. Avoid improper installation and never position the unit where good ventilation is unattainable.
   When installing this television, distance recommendations must be maintained between the floor and wall, as well as instalment in a tightly enclosed area or piece of furniture. Adhere to the minimum distance guidelines shown for safe operation.

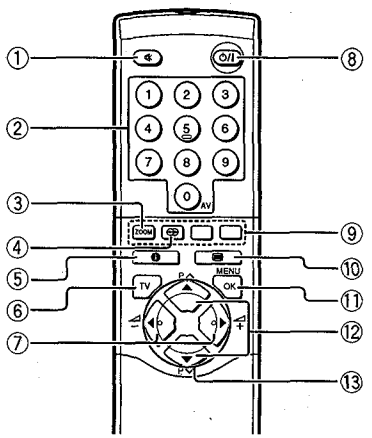


4. Do not allow objects or liquid into the cabinet openings.
5. In the event of a fault, unplug the unit and call a service technician. Do not attempt to repair it yourself or remove the rear cover.

When you don't use this TV set for a long period of time, be sure to disconnect the power plug from the AC outlet.

Locations of remote control buttons

OUTSIDE BUTTONS



①	Mute button	p.10
②	Number buttons	p.7
③	ZOOM button	p.14
④	Hyper Sound button	p.10
⑤	Information button	p.7, 12
⑥	TV button	
⑦	Volume –/+ buttons	p.8
⑧	Standby button	p.6, 8
⑨	Colour buttons	
⑩	TV/text button	p.15
⑪	OK button	
⑫	PR channel V/Λ buttons	p.7
⑬	◄/►/▼/▲ buttons	
⑭	Teletext/VCR control buttons	p.15
⑮	VCR/TEXT selector switch	

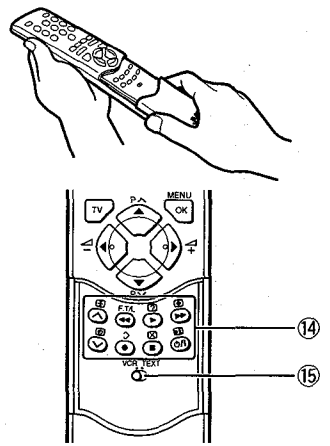
- When switched to the VCR side, the ⑭ buttons function as the JVC VCR control buttons.

Notes:
- For details on button functions, see the JVC VCR manual.
- Depending on your VCR, the remote control may not operate perfectly, and may not even control the VCR at all.

- When switched to the TEXT side, the ⑭ buttons function as teletext control buttons.

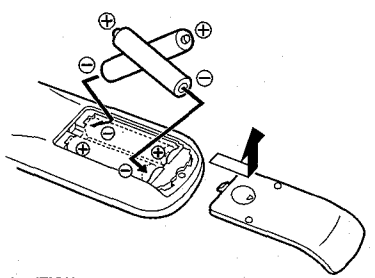
INSIDE BUTTONS

How to open the cover.



Inserting batteries into your remote control

Use two AAA/R03 dry cell batteries.
Insert two batteries, observing the ⊕ and ⊖ polarities, inserting the ⊖ end first.

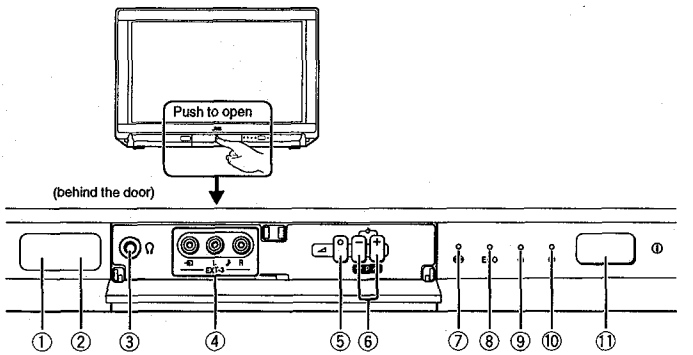


CAUTION:
- Follow the cautions printed on the batteries.

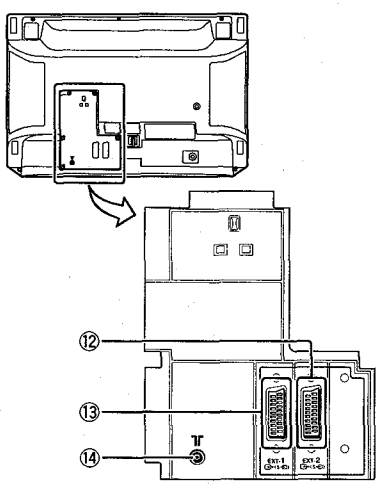
Notes:
- Battery life is approx. six months to one year, depending on frequency of use.
- If the remote control operates erratically, replace the batteries.
- We recommend that you use the supplied batteries temporarily and replace them as soon as operation becomes erratic. The supplied batteries are for operational testing of the remote control, not for regular use.

Locations of TV buttons and parts

FRONT PANEL



REAR PANEL

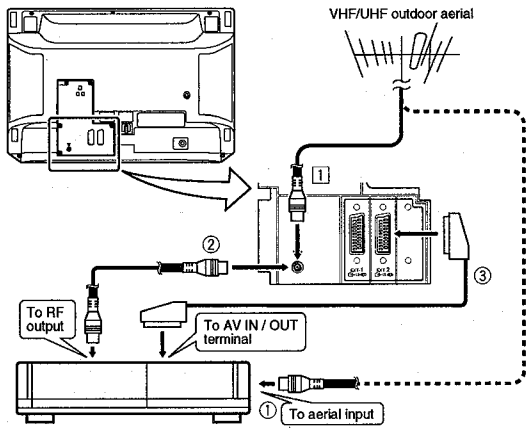


①	Remote control sensor	
②	ECO sensor	
③	Headphone jack (mini jack)	p.5
④	EXT-3 terminals	p.4, 17
⑤	Volume button (Press this button to display the volume level indicator. Press the ⑥ Up/down buttons to change volume while the volume level indicator is displayed.)	p.8
⑥	Up/down buttons (You can use this button as the V/Λ buttons of the PR channel. Pressing the ⑤ Volume button makes this button function as the Volume –/+ buttons.)	p.8
⑦	Hyper Sound lamp	p.10
⑧	ECO lamp	p.11
⑨	Sleep timer lamp	p.12
⑩	Power lamp	p.6, 8
⑪	Main power button	p.6, 8
⑫	EXT-2 terminal	p.4, 17
⑬	EXT-1 terminal	p.4, 17
⑭	Aerial socket	p.4

PREPARATION AND BASIC OPERATION

1. Connecting the aerial and VCR

If not connecting a VCR, do 1 only.
If connecting a VCR, proceed ① → ② → ③.



VCR / S-VHS VCR

Notes:

- For further details, refer to manuals provided with the devices you are connecting.
- Connecting cables are not supplied.
- You can view video from a VCR without doing ③. For details, refer to the manual provided with your VCR.

2. Connecting other external devices

Conditions:

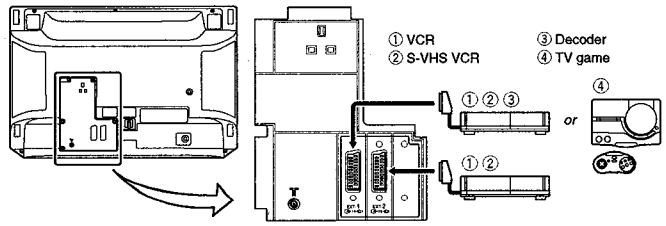
- This TV set has external device connectors, EXT-1 to EXT-3 to which you can connect a VCR. However, there are some differences in functions among them. Consult the following table before making connections.

	EXT-1	EXT-2	EXT-3 (front)
VIDEO IN	√*1	√*1	√
VIDEO OUT	√*2	√*3	–
S-VIDEO IN	√*1	√*1	–
S-VIDEO OUT	–	–	–
RGB IN	√	–	–
AUDIO-L IN	√	√	√
AUDIO-R IN	√	√	√
AUDIO-L OUT	√*2	√*3	–
AUDIO-R OUT	√*2	√*3	–
Others	• Automatic detection and switching of input mode. • Automatic detection and switching of ZOOM mode.		

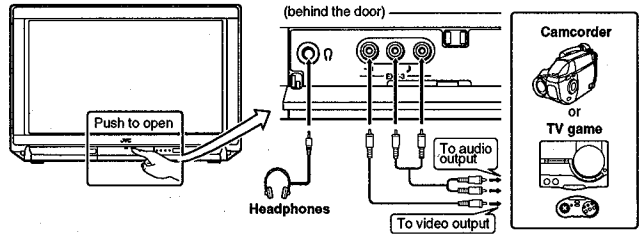
*1 Select VIDEO or S-VIDEO mode from the EXT SETTING menu. For details, see page 17 "EXT SETTING."
*2 Only the TV broadcast is output.
*3 TV broadcasts or inputs from EXT-1 or 3 can be output. For details, see page 17 "DUBBING."

- Use headphones with a stereo mini jack (dia. 3.5 mm).
  When using headphones, the speakers will not output sound.
- For further details, refer to manuals provided with the devices you are connecting.
- Connecting cables are not supplied.

Devices which can be connected to the terminals on the rear panel

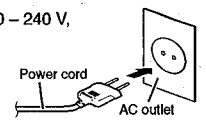


Devices which can be connected to the terminals on the front panel



3. Connecting the power cord

Insert the power plug into an AC outlet (AC 220 – 240 V, 50 Hz).



4. Turning the power and TV on

1. Press the Main power button on the TV to turn the power on.

The Power lamp lights red (power on), then green (TV on).

If the power lamp stays red and does not change to green:
Your TV is in the standby mode. Press the Standby button on the remote control to turn your TV on.

Note:
- You can also press the PR channel V/Λ button, a number button or the up/down button on the front panel to turn the TV on.

5. Initial Settings

- When the TV is first turned ON, it enters into the initial setting mode, and the JVC logo is displayed.

Note:
- The TV enters into the initial setting mode only once when the TV is first turned ON. If you turn the TV off or exit from the setting menu while performing the initial settings by mistake, you must redo the initial settings, "LANGUAGE" and "AUTO PROGRAM", following the procedures described in page 18.

1. Press any button on the remote control.

LANGUAGE menu appears.

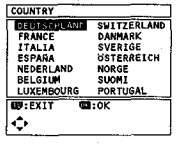
Selecting the on-screen language

You can select your language from ten languages listed on the LANGUAGE menu. The displayed menus on the screen are described in the selected language.

2. Press ▼/▲ button to select ENGLISH.

3. Press OK button.

English is set for the on-screen display description, and the COUNTRY menu appears.

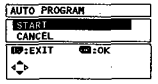


Automatically allocating stations to PR channels

To view a TV programme, you must first allocate broadcast stations to PR channels. You can automatically allocate up to 99 stations to PR channels PR1 to PR 99 on this TV. Broadcast stations that can be received are automatically determined and set to PR channels.

4. Press ▼/▲ and ◄/► button to select your country, then press OK button.

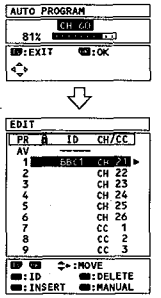
The AUTO PROGRAM menu appears.



5. Press OK button.

Broadcast stations are automatically allocated to the PR channels.

The EDIT menu is displayed after the allocation is completed.
- If you want to edit PR channels or allocate a station to PR0 (AV) channel, see page 19 "EDIT/MANUAL" for procedural description.



Note:
- If you want to quit automatic allocation in the middle, press the TV button.

● The procedure is complete.
Press the TV button to exit the menu.

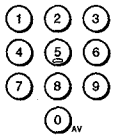
6. Viewing a television programme

1. Select a PR channel.

Selection

- Press the PR channel V/Λ button.

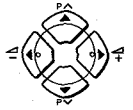
Direct channel selection



- Press the corresponding number buttons.
  Example: To select channel 6, press "6".
  To select channel 12, press "1" and "2".

To use the PR LIST to select a PR channel

1. Press Information button.
   The PR LIST appears.
   - To exit the PR LIST, press TV button.



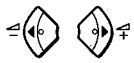
2. Press ▼/▲ button to select a PR channel.
   - Press ► button to view the next page of the PR LIST.
   - Press ◄ button to view the previous page of the PR LIST.

3. Press OK button.

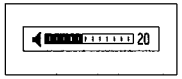
Notes:
- If the picture is not clear or no colour appears, change the colour system manually (see page 11 for details).
- Enter "0" when selecting an AV channel (PR 0 channel).

Note:
- The 🔒 mark will appear on the PR channel when the CHILD LOCK setting is on (see page 13).

2. Press the Volume –/+ button.



The Volume level indicator appears and the volume changes as you press the Volume –/+ buttons.



Turning the TV and power off

1. Press the Standby button to turn the TV off.

The Power lamp changes from green to red.
The TV enters standby mode.

2. Press the Main power button on the TV to turn the main power off.

The Power lamp goes off.

Note:
- To save energy, we recommend that you turn the main power off if you do not plan to use your TV for a long time.

To select a channel without using the remote control

You can also use the buttons on the front panel of the TV.

1. Press the Up/down button to turn your TV on.

The Power lamp changes from red to green.

Note:
- If your TV does not turn on, press the Main power button, and then press the Up/down button again.

2. Press the Up/down button to select the PR channel.

3. Adjust the volume.

1. Press the Volume button.
   The volume level indicator appears.
2. Press the Up/down button while the volume level indicator is displayed.

Note:
- PR channel selection is not available while the volume level indicator is displayed.

● To turn off your TV, press the Main power button.

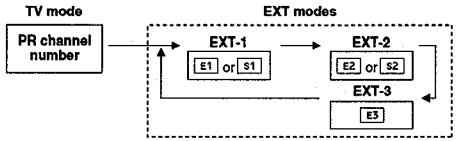
The Power lamp goes off.

Viewing images from external devices

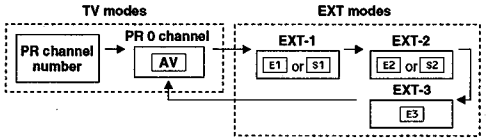
1. Repeatedly press the 0 button to select the EXT terminal.

The current selection appears, and disappears after several seconds.

When a station is not registered to the PR 0 (AV) channel, pressing the 0 button changes the selection as follows:



When a station is registered to the PR 0 (AV) channel, pressing the 0 button changes the selection as follows:



TV mode:
Shows images input from an external device (such as a VCR) or TV aerial connected to the aerial socket of your TV.

EXT modes:
Shows images input from an external device (such as a VCR) connected to the selected EXT terminal.
- To use S-Video mode to view input from an S-VHS VCR, see "To select S-VIDEO input for a terminal" on page 17. When selecting EXT-1 or EXT-2 input terminals as S-VIDEO input, E1 or E2 changes to S1 or S2 in the display.

Notes:
- If the picture is not clear or no colour appears, change the colour system manually (see page 11).
- When selecting an EXT terminal with no input signal, the EXT number and ID become fixed on screen.

SOUND AND PICTURE

MUTE

You can mute the volume to 0 instantly. This is convenient when answering the phone or when receiving visitors.

1. Press (Mute).

The sound is muted.

To restore the sound:
Press the Mute button again.

HYPER SOUND

You can enjoy sounds with a wider ambiance by Hyper sound.

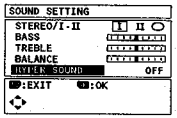
1. Press (Hyper Sound).

The HYPER SOUND ON appears.
- The Hyper Sound lamp lights.

To return to normal sound:
Press the Hyper Sound button again.

- HYPER SOUND can be also set to ON by operating MENU.

1. Press the OK button.
   The MENU appears.
2. Press ▼/▲ button to select SOUND SETTING, and press OK button.
   The SOUND SETTING menu appears.
3. Press ▼/▲ button to select HYPER SOUND.



4. Press ◀/▶ button to select ON, OFF.
5. Press the OK button.
   This completes the setting.
   - If you turned on HYPER SOUND, the Hyper Sound lamp lights.

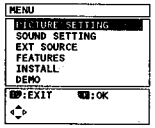
MULTI SOUND

You can select the multi sound mode for stereo broadcast programmes and bilingual programmes.

Note:
- The MULTI SOUND function has no effect on programmes other than A2 or NICAM broadcast programmes.

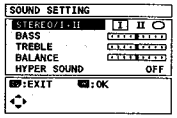
1. Press OK.

The MENU appears.



2. Press ▼/▲ to select SOUND SETTING, then press OK.

The SOUND SETTING menu appears.



3. Press ▼/▲ to select STEREO/I•II.

Notes:
- The multi sound mode display is different from the broadcast programme.
- The multi sound function does not work in EXT modes.
  The STEREO/I•II does not appear in SOUND SETTING menu.

4. Press ◀/▶ to select a multi sound mode.

- : Stereo sound
- I : Bilingual I (Sub I)
- II : Bilingual II (Sub II)
- O : Normal sound

5. Press OK.

This completes the setting.

Note:
- When you display the current PR channel number, the current multi sound mode appears for approximately 3 seconds.

TINT

You can choose from among three TINT modes.

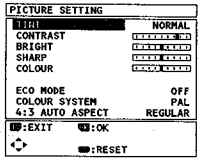
1. Press OK.

The MENU appears.

2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.

3. Press ▼/▲ to select TINT.



4. Press ◀/▶ to select a tint mode.

COOL:
A cool white colour base with a boost in the colour and contrast levels. Creating a more vivid picture.

WARM:
Use this mode when viewing film programmes.

NORMAL:
A normal white colour base with no boost in the colour or contrast levels.

5. Press OK.

This completes the setting.

COLOUR SYSTEM

The colour system is automatically selected, but if the picture is not clear or no colour appears, select the colour system manually.

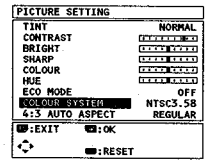
1. Press OK.

The MENU appears.

2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.

3. Press ▼/▲ to select COLOUR SYSTEM.



4. Press ◀/▶ to select the appropriate colour system.

PAL:
PAL system.

SECAM:
SECAM system.

NTSC3.58:
NTSC 3.58 MHz system.

NTSC4.43:
NTSC 4.43 MHz system.

AUTO:
Automatic colour system selection.

Notes:
- Auto may not function properly depending on signal quality. If the picture is abnormal in AUTO mode, select another colour system manually.
- When in TV mode (PR 1 to PR 99), you cannot select AUTO, NTSC 3.58 or NTSC 4.43.
- When in TV mode (PR 0), you cannot select NTSC 3.58 or NTSC 4.43.

5. Press OK.

This completes the setting.

PICTURE/SOUND ADJUSTMENT

You can adjust the picture and sound as you like.

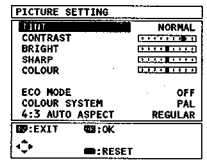
To adjust the picture

1. Press OK.

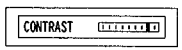
The MENU appears.

2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.



3. Press ▼/▲ to select an item, and press ◀/▶ to adjust it.



- To return to the default settings, press blue button.

◀	Item	▶
Lower	CONTRAST (picture contrast)	Higher
Darker	BRIGHT (picture brightness)	Brighter
Softer	SHARP (picture sharpness)	Sharper
Lighter	COLOUR (picture colour)	Deeper
Reddish	HUE (picture hue)	Greenish

Note:
- You can adjust the HUE (picture hue) only when the colour system is NTSC 3.58 or NTSC 4.43.

4. Press OK.

This completes the setting.

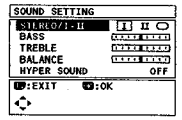
To adjust the sound

1. Press OK.

The MENU appears.

2. Press ▼/▲ to select SOUND SETTING, then press OK.

The SOUND SETTING menu appears.



3. Press ▼/▲ to select an item, and press ◀/▶ to adjust it.

◀	Item	▶
Weaker	BASS (low frequency sound)	Stronger
Weaker	TREBLE (high frequency sound)	Stronger
Left	BALANCE (audio balance)	Right

4. Press OK.

This completes the setting.

ECO MODE

When you set ECO MODE to ON, the screen contrast is automatically adjusted to a setting suitable for the brightness of your room.
This reduces eye strain and the power consumption of the TV.

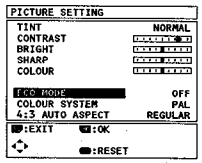
1. Press OK.

The MENU appears.

2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.

3. Press ▼/▲ to select ECO MODE.



4. Press ◀/▶ to select ON, OFF.

5. Press OK.

This completes the setting.
- If you turned on ECO MODE, the ECO lamp lights.

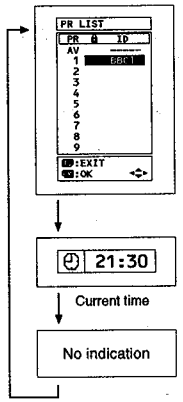
OTHER FEATURES

INFORMATION

You can display the PR LIST or the current time.

1. Press [i] (Information) repeatedly.

The display changes cyclically in the following order.



About PR LIST:

- Ten positions including the currently selected PR channel will be displayed as a list.
  Press ▼/▲ / ◀/▶ to select the desired PR channel. For details see page 7.

About the current time display:

This TV uses teletext data to determine the current time.

- If the TV has not received a station that has teletext data since it was turned on, the time display is blank. To view the current time, select a station that is broadcasting teletext data. As long as you do not turn off the TV, then even if you select other stations, the time will still be displayed.

SLEEP TIMER

You can set the TV to automatically turn off after a specified period of time.

Note:

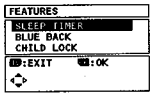
- The SLEEP TIMER does not turn off the Main power.

1. Press OK.

The MENU appears.

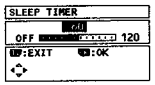
2. Press ▼/▲ to select FEATURES, then press OK.

The FEATURES menu appears.



3. Press ▼/▲ to select SLEEP TIMER, then press OK.

The SLEEP TIMER menu appears.



4. Press ◀/▶ to select a period of time.

You can set the period of time a maximum of 120 minutes in 10 minute increments.

OFF:
Turns off the SLEEP TIMER.

5. Press OK.

The selected period of time is displayed for approx. 3 seconds.

- The Sleep timer lamp lights if you set the SLEEP TIMER.

To display the remaining Sleep timer time:

Perform steps 1 to 3 to display the SLEEP TIMER menu, and press OK button when you finish checking the time.

To turn off the Sleep timer:

Perform steps 1 to 3 to display the SLEEP TIMER menu, press ◀ button to select "OFF", and then press OK button.

- The Sleep timer lamp goes out.

Note:

- One minute before the SLEEP TIMER turns off the TV, "GOOD NIGHT!" appears. Three seconds before the SLEEP TIMER turns off the TV, "JVC" is displayed on the screen.

BLUE BACK

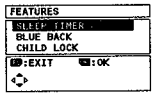
When viewing a PR channel with no or poor reception, or if there is no input from an external device, you can mute the sound and change the picture into a blue picture.

1. Press OK.

The MENU appears.

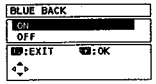
2. Press ▼/▲ to select FEATURES, then press OK.

The FEATURES menu appears.



3. Press ▼/▲ to select BLUE BACK, then press OK.

The BLUE BACK menu appears.



4. Press ▼/▲ to select ON or OFF.

5. Press OK.

This completes the setting.

CHILD LOCK

You can lock some PR channels to prevent your children from watching them.

To set the CHILD LOCK

1. Press OK.

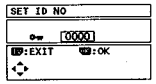
The MENU appears.

2. Press ▼/▲ to select FEATURES, then press OK.

The FEATURES menu appears.

3. Press ▼/▲ to select CHILD LOCK, then press 0 button.

The SET ID NO menu appears.

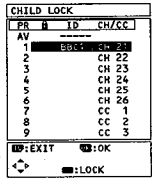


4. Enter the ID number.

1. Press ▼/▲ to select a number.
2. Press ◀/▶ to move the cursor.

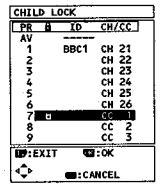
5. Press OK.

The CHILD LOCK menu appears.



6. Press ▼/▲ to select a PR channel, then press blue button.

The selected PR channel is locked.



- To cancel the CHILD LOCK: Press blue button again.
- Repeat step 6 to lock all PR channels which you want to lock.

7. Press OK.

This completes the setting.

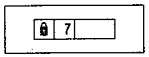
Notes:

- You cannot select a locked PR channel using the PR channel V/Λ buttons.
- Even if you can select a locked channel and display it, you can not view the programme of the locked channel.

To view a locked PR channel

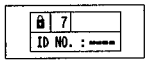
1. Select a locked PR channel.

- Use the number buttons to select the PR channel.
  The locked channel is displayed.



2. Press [i] (Information).

The ID NO. input menu appears.



3. Press the number buttons to enter the ID number.

You are now viewing the locked PR channel.

If you forget the ID number:
Perform steps 1 to 3 of "To set the CHILD LOCK". After you confirm the ID number, press the TV button to exit the menu.

DEMONSTRATION

The demonstration runs automatically and introduces the menus of this TV's main features.

1. Press OK.

The MENU appears.

2. Press ▼/▲ to select DEMO, then press OK.

The demonstration begins.

- To stop the demonstration, press any button on the remote control.

ZOOM

Select a ZOOM mode to change the picture format. You can enlarge the picture to fill the wide TV screen (16:9 aspect ratio). In addition, you can stretch a normal picture (4:3 aspect ratio) to fill the wide TV screen.

Notes:
- The picture format information of the present broadcasting programme may be received as WSS (Wide Screen Signalling). When AUTO mode is selected for ZOOM mode and the WSS signal is received, this TV automatically selects the optimum ZOOM mode corresponding to the WSS signal. However, in the case of weak WSS signal reception, this function may not work correctly. In this case, select the optimum ZOOM mode manually.
- If the EXT-1 terminal's input is from a picture signal with a 16:9 aspect ratio picture format, the ZOOM mode may automatically changes to FULL mode. This is because the TV detects an identification signal which is not an WSS signal.

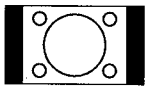
Manual ZOOM selection

You can select a ZOOM mode manually.

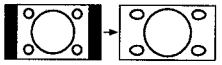
1. Press ZOOM repeatedly to select a ZOOM mode.

The picture expands.

REGULAR mode:
Use to view a normal picture (4:3 aspect ratio) unchanged.



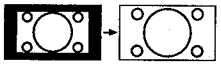
PANORAMIC mode:
Stretches the left and right sides of a normal picture to fill the screen, in a way that does not appear unnatural.



(PANORAMIC)

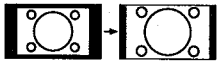
Note:
- In PANORAMIC mode, the top, bottom, left and right of the picture are slightly cut off.

16:9 ZOOM mode:
Use to expand a wide picture (16:9 aspect ratio).



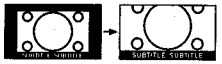
(16:9 ZOOM)

14:9 ZOOM mode:
Use to expand a picture with a 14:9 aspect ratio.



(14:9 ZOOM)

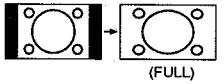
16:9 ZOOM SUBTITLE mode:
Use to expand a picture with a 16:9 aspect ratio having subtitles at the bottom of the screen.



(16:9 ZOOM SUBTITLE)

Note:
- In 16:9 ZOOM SUBTITLE mode, the top of the picture are slightly cut off.

FULL mode:
Uniformly stretches the left and right sides of a normal picture (4:3 aspect ratio) to fill the wide TV screen.



(FULL)

Note:
- For pictures with a 16:9 aspect ratio that have been squeezed into a normal picture (4:3 aspect ratio), select FULL mode to restore their original dimensions.

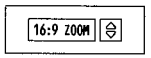
To move the picture vertically:

If you cannot see subtitles at the bottom of the screen, or if the top or bottom is cut off, move the picture vertically.

Note:
- You cannot move the picture vertically in AUTO, REGULAR and FULL mode.

1. Press ZOOM.

The current ZOOM mode is displayed.



2. Before the display disappears, press ▼/▲ to move the picture up or down.

△ , ▽ :Default position
▲ , ▼ :The picture is moved from default position.

Note:
- If you change the ZOOM mode, the picture returns to its default position.

Automatic ZOOM selection (AUTO mode)

You can set your TV to automatically select the optimum ZOOM mode to suit the picture format.

1. Press ZOOM repeatedly to select AUTO.

Your TV automatically selects the optimum ZOOM mode to suit the current programme's picture format.

Note:
- This function may not work correctly depending on the programme. In this case, select the optimum ZOOM mode manually.

To preset a ZOOM mode for the normal picture:

You can preset one of the three ZOOM modes, REGULAR, PANORAMIC or 14:9 ZOOM, as the ZOOM mode for the normal picture (4:3 aspect ratio).

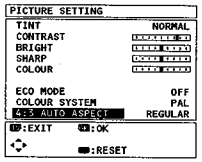
1. Press OK

The MENU appears.

2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.

3. Press ▼/▲ to select 4:3 AUTO ASPECT.



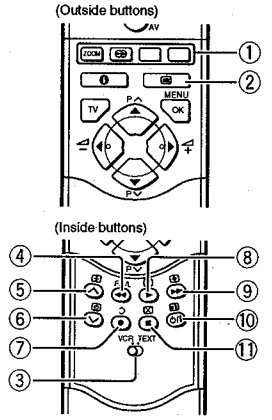
4. Press ▶ to select ZOOM mode.

5. Press OK.

This completes the setting.

TELETEXT

Note:
- If you have trouble receiving teletext broadcasts, consult your local dealer or the teletext station.



① Colour buttons
② TV/text button
③ VCR/TEXT selector switch
- When this switch is set to the TEXT side, the following buttons function as the teletext control button.

④ MODE button
⑤ HOLD button
⑥ SUB PAGE button
⑦ STORE button
⑧ REVEAL button
⑨ SIZE button
⑩ INDEX button
⑪ DISPLAY CANCEL button

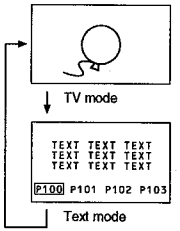
BASIC TELETEXT OPERATION

You can view three types of teletext broadcasts on the TV: Fastext, TOP and WST. The TV automatically recognizes the type of teletext broadcast.

Condition:
- The VCR/TEXT selector switch must already be set to the TEXT side.

1. Select a channel with a teletext broadcast.

2. Press (TV/text).



3. Select a page number.

Browse:
Press the PR channel V/Λ button on the remote control.

Direct selection:
Press the number buttons to enter a three-digit page number.

Colour button selection:
Press a colour button to select the corresponding page number on the bottom line of the screen.

Notes:
- Category names of teletext pages may appear instead of page numbers.
- In principle, ZOOM mode is fixed to FULL mode when you view Teletext programmes.
- Some Teletext programmes display a mixture of regular TV programmes and Text information. When viewing these Teletext programmes, pay attention to the following points.
  - Teletext pages cannot be selected with the Colour buttons. To change to other Teletext pages, select the Teletext page that you want to view with the Channel V/Λ buttons or number buttons.
  - ZOOM mode returns to the mode you selected before you started viewing Teletext programmes. If part of the Teletext information is missing at the top or bottom of the screen, press the ZOOM button to switch ZOOM mode to FULL mode or REGULAR mode.

● To return to TV mode, press the TV/text again.

Note:
- You can also return to TV mode by pressing the TV button.

DISPLAY CANCEL

You can search for a teletext page while watching TV.

1. Select a teletext page.

The TV searches for a teletext page.

2. Press DISPLAY CANCEL.

The TV programme appears.

When the TV finds the teletext page, its page number appears in the upper left of the screen.

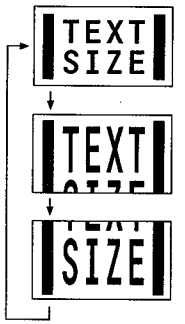
Note:
- If selecting something other than REGULAR or FULL mode for ZOOM mode, the page number does not appear on the screen.

3. Press (TV/text) when the page number is on the screen.

SIZE

You can double the height of the teletext display.

1. Press SIZE repeatedly.

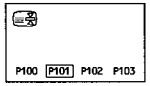


HOLD

You can hold a teletext page on the screen for a desired length of time, even while several other teletext pages are being received.

1. Press HOLD.

is displayed in the upper left of the screen, and the teletext page is held on the screen.



To release hold mode:
Press HOLD button again.

INDEX

Just press INDEX button to return to the index page.

1. Press INDEX.

Fastext/TOP/WST:
Returns to page 100 or a previously specified page.

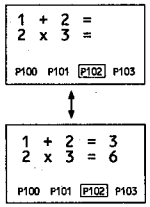
LIST mode:
Returns to the page number displayed in the lower left area of the screen.

REVEAL

Some teletext pages include hidden text (such as answers to a quiz).

1. Press REVEAL.

Each time you press REVEAL button, text is hidden or revealed.



LIST MODE

If you store the numbers of teletext pages you view often, you can quickly call up a desired teletext page whenever you like.

Note:
- You can store up to 64 pages in memory. You can store four pages in each channel from 1 to 15 (60 pages), and four pages that are the same for all channels above channel 15 (4 pages).

To store the page numbers

1. Press MODE to engage LIST mode.

Stored page numbers are displayed at the bottom of the screen.

2. Press a colour button, then enter the number of the teletext page.

To assign other pages to remaining colour buttons, repeat this operation.

3. Press and hold STORE.

The four page numbers blink white to indicate that they are stored in memory.

To call up a stored page

1. Press MODE to engage LIST mode.

Stored page numbers are displayed at the bottom of the screen.

To release LIST mode:
Press MODE button again.

2. Press a colour button to which a page has been assigned.

SUB PAGE

Some teletext pages include sub-pages that are automatically displayed. You can hold any sub-page, or view it at any time.

1. Call up a teletext page with sub-pages.

2. Press SUB PAGE.

3. Enter the number of the sub-page.

Example:
To select the 3rd sub-page, press number buttons "0", "0", "0", and "3".

Note:
- You can also select a sub page by pressing the red or green colour button.

OTHER PREPARATION

EXT SETTING

You can select S-VIDEO or normal input for the EXT-1 and EXT-2 terminals, and you can give an EXT ID to each EXT input terminal.

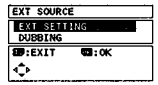
To select S-VIDEO input for a terminal

1. Press OK.

The MENU appears.

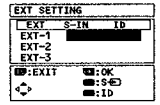
2. Press ▼/▲ to select EXT SOURCE, then press OK.

The EXT SOURCE menu appears.



3. Press ▼/▲ to select EXT SETTING, then press OK.

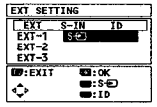
The EXT SETTING menu appears.



4. Press ▼/▲ to select an EXT input terminal.

5. Press yellow button.

The S-VIDEO input indication appears.
- To select normal input, press yellow button again.



- If you want to set an EXT ID here, perform the operation procedures from the step 4 in the next column.

6. Press OK.

The menu disappears.

To give an EXT ID to an EXT input terminal

1. Press OK.

The MENU appears.

2. Press ▼/▲ to select EXT SOURCE, then press OK.

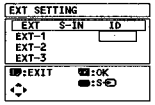
The EXT SOURCE menu appears.

3. Press ▼/▲ to select EXT SETTING, then press OK.

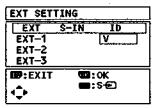
The EXT SETTING menu appears.

4. Press ▼/▲ to select an EXT input terminal.

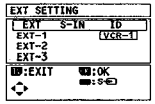
5. Press blue button.



6. Repeatedly press ▼/▲ to select a character.



7. Press ▶ to move the cursor forward.
- Pressing ◀ button moves the cursor backward.
- To cancel the operation, press the 0 (Information) button.



8. Press OK.

Note:
- To erase EXT ID, reset the EXT ID to a blank space.

● This completes the procedure. Press the TV button to exit the menu.

DUBBING

Select output to a VCR or other device connected to the EXT-2 terminal. Note that you cannot output from the EXT-2 terminal when the TV is turned off.

Note:
- RGB signals from TV games and TELETEXT screens cannot be output from EXT-2 terminal.

1. Press OK.

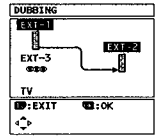
The MENU appears.

2. Press ▼/▲ to select EXT SOURCE, then press OK.

The EXT SOURCE menu appears.

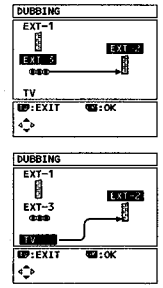
3. Press ▼/▲ to select DUBBING, then press OK.

The DUBBING menu appears.



4. Press ▼/▲ to select the input which you want to output from EXT-2.

TV:
The sound and picture of the currently selected PR channel is output from EXT-2, so you can record the output on a VCR connected to the EXT-2 terminal while watching a video input from the EXT-1 or EXT-3 terminal.



5. Press OK.

The menu disappears.

LANGUAGE

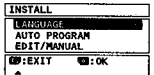
You can select one of ten languages for the on-screen display.

1. Press OK.

The MENU appears.

2. Press ▼/▲ to select INSTALL, then press OK.

The INSTALL menu appears.



3. Press ▼/▲ to select LANGUAGE, then press OK.

The LANGUAGE menu appears.

4. Press ▼/▲ to select a language.

5. Press OK.

This completes the setting.

AUTO PROGRAM

You can automatically allocate up to 99 stations to PR channels PR 1 to PR99 on this TV.
When the TV receives a signal describing the station's name, it allocates those stations, station IDs, and registers then as they were preset at the JVC factory.

1. Press OK.

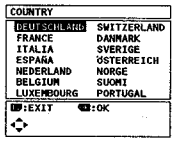
The MENU appears.

2. Press ▼/▲ to select INSTALL, then press OK.

The INSTALL menu appears.

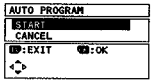
3. Press ▼/▲ to select AUTO PROGRAM, then press OK.

The COUNTRY menu appears.



4. Press ▼/▲/◀/▶ to select your country, then press OK.

The AUTO PROGRAM menu appears.



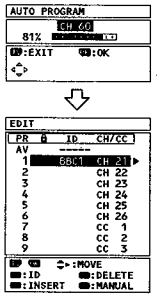
Note:

- If you make a mistake when selecting your country, or do not want to use the Automatic allocation function, select CANCEL, and then press OK button to return to the INSTALL menu.

5. Press OK.

The PR channel is automatically set and the EDIT menu is displayed.

- If you want to edit PR channels or allocate a station to PR0 (AV) channel, see page 19 "EDIT/MANUAL" for procedural description.



Note:

- If a station you want to view is not allocated to a PR channel, perform Manual allocation (see page 21).

● The procedure is complete. Press the TV button to exit the menu.

EDIT/MANUAL

You can change PR channel settings by doing any of the following:

- You can delete an unwanted station from a PR channel,
- You can change the PR channel number of a station,
- You can add station IDs to PR channels,
- You can add a new station to a PR channel, or
- You can manually allocate the desired station to a PR channel.

To edit PR channels

1. Press OK.

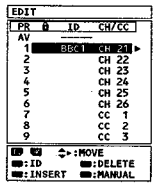
The MENU appears.

2. Press ▼/▲ to select INSTALL, then press OK.

The INSTALL menu appears.

3. Press ▼/▲ to select EDIT/MANUAL, then press OK.

The EDIT menu appears.

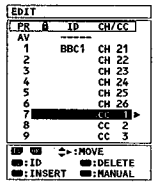


4. Use any of the procedures described in the following pages to change the PR channel settings.

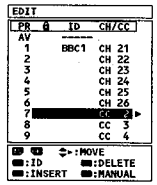
● This completes the procedure. Press the TV button to exit the menu.

To delete a station from a PR channel

1. Press ▼/▲ to select the station you want to delete.



2. Press yellow button.

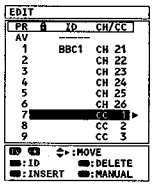


Note:

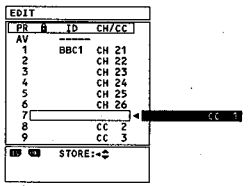
- Stations allocated to PR channels following the deleted PR channel number are shifted back by one to the preceding PR channel number.

To change the PR channel number of a station

1. Press ▼/▲ to select the station.

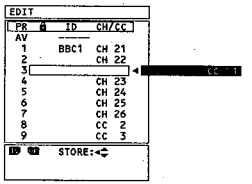


2. Press ▶.

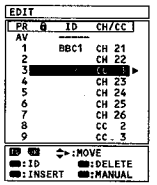


3. Press ▼/▲ to move the selected station to the desired PR channel number.

- To cancel the operation, press the (Information) button.

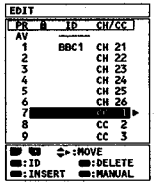


4. Press ◀.

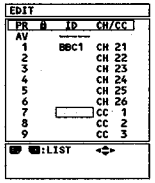


To add a station ID to a station

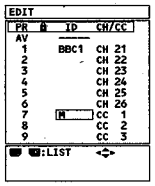
1. Press ▼/▲ to select the station.



2. Press red button.

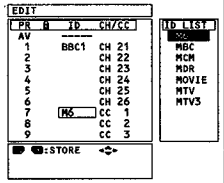


3. Press ▼/▲ to select the first letter of the desired station's ID.



4. Press OK.

The ID LIST appears.

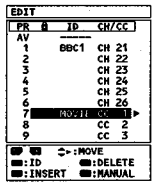


5. Press ▼/▲ to select the station ID.

- To cancel the operation, press the [i] (Information) button.

6. Press OK.

Returns to the EDIT menu.



Programming a station's ID manually:

Follow the operations below in place of steps 3 thru 5.

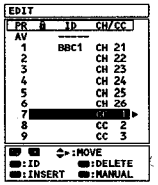
(1) Press the ▼/▲ button repeatedly to select a character.

(2) Press the ▶ button to move cursor to input position.
- Pressing the ◀ button moves the cursor backward.

(3) To complete station ID, follow steps (1) and (2) repeatedly.
- A station ID can have up to 5 characters.

To add a new station to a PR channel

1. Press ▼/▲ to select the row containing the PR channel number to which you want to add a station.



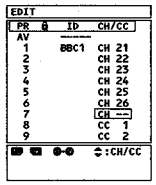
2. Press green button.

3. Press ▼/▲ to display the enter number indicator.

CH: to add terrestrial broadcast stations

CC: to add cable TV stations

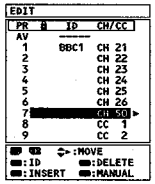
- To cancel the operation, press the [i] (Information) button.



Note:
- For details on the relationship between the displayed CH/CC number and the actual channel number, see the Channel table on page 23.

4. Press the number buttons to enter the channel number.

- To enter a one-digit channel number, enter the corresponding number and press OK button.

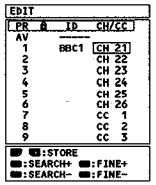


Note:
- When you add a station, the station preset to PR99 is deleted.

To manually allocate a station to PR channel (Manual allocation)

1. Press blue button.

Your TV enters the Manual allocation mode.



2. Press ▼/▲ to select a PR channel number.

Note:
- PR channel number "AV" appears on the screen as PR 0 channel. We recommend that you allocate this PR channel to a VCR connected to the aerial socket.

3. Press green or red button to search for a station.

Scanning stops when the TV receives a broadcast.

Press green or red button to search for another station, and keep searching until you see the station you want.

CH: Terrestrial broadcast stations

CC: Cable TV stations

If reception is poor:

Press the blue or yellow button to fine-tune the station.

Note:
- For details on the relationship between the displayed CH/CC number and the actual channel number, see the Channel table on page 23.

4. Press OK.

The station is allocated to a PR channel.

OPERATING INSTRUCTIONS

JVC

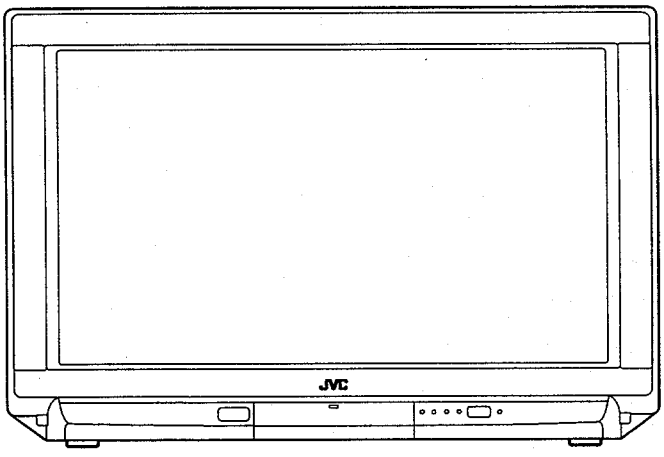
COLOUR TELEVISION

Natural Vision

AV-24WT2EK
AV-28WT2EK

CONTENTS

SAFETY PRECAUTIONS 2
Locations of remote control buttons 4
Locations of TV buttons and parts 5
PREPARATION AND BASIC OPERATION 6
SOUND AND PICTURE 12
OTHER FEATURES 14
TELETEXT 17
OTHER PREPARATION 19
TROUBLESHOOTING 24
SPECIFICATIONS 26



INSTRUCTIONS

CQ40350-001-E

Thank you for purchasing this JVC colour television.

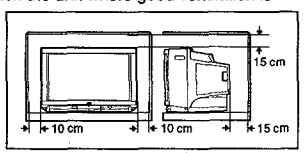
To ensure your complete understanding, please read this manual thoroughly before operation.

SAFETY PRECAUTIONS

WARNING: **TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

CAUTION: TO ENSURE PERSONAL SAFETY, OBSERVE THE FOLLOWING RULES REGARDING THE USE OF THIS UNIT.

- Operate only from the power source specified (AC 220 – 240V, 50 Hz) on the unit.
- Avoid damaging the AC plug and power cord.
- Avoid improper installation and never position the unit where good ventilation is unattainable.
  When installing this television, distance recommendations must be maintained between the floor and wall, as well as installment in a tightly enclosed area or piece of furniture. Please adhere to the minimum distance guidelines show for safe operation.



- Do not allow objects or liquid into the cabinet openings.
- In the event of a fault, unplug the unit and call a service technician. Do not attempt to repair it yourself or remove the rear cover.

* When you do not use this TV set for a long period of time, be sure to disconnect the power plug from the AC outlet.

WARNING: **DO NOT cut off the mains plug from this equipment.** If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or adaptor or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If a new mains plug has to be fitted, then follow the instruction given below:

IMPORTANT.

DO NOT make any connection to the larger terminal which is marked with the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.

The wires in the mains lead on this product are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As these colours may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

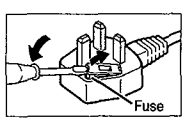
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

When replacing the fuse only a correctly rated approved type should be used and be sure to re-fit the fuse cover.

IF IN DOUBT — CONSULT A COMPETENT ELECTRICIAN.

How To Replace The Fuse

Open the fuse compartment with the blade screwdriver, and replace the fuse.



Some Do's And Don'ts On The Safe Use Of Equipment

This equipment has been designed and manufactured to meet international safety standards but, like any electrical apparatus, care must be taken if you are to obtain the best results and safety is to be assured.

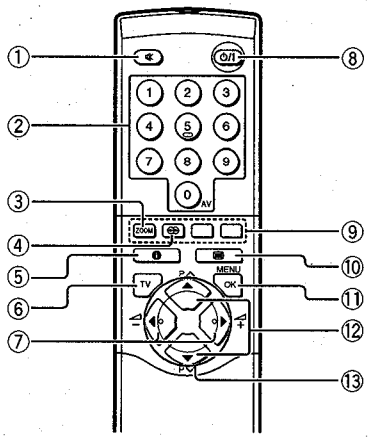
DO read the operating instructions before you attempt to use the equipment.
DO ensure that all electrical connections (including the mains plug, extension leads and interconnections between pieces of equipment) are properly made and in accordance with the manufacturer's instructions.
DO consult your dealer if you are ever in doubt about the installation or operation or safety of your equipment.
DO be careful with glass panels or doors on equipment.

DON'T continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way — switch off — withdraw the mains plug and consult your dealer.
DON'T remove any fixed cover as this may expose dangerous voltages.
DON'T leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a standby mode. Switch off using the switch on the equipment and make sure that your family know how to do this. Special arrangements may need to be made for infirm or handicapped people.
DON'T use equipment such as personal stereos or radios that may distract you when driving. It is illegal to watch television while driving.
DON'T listen to headphones at high volume, as such use can permanently damage your hearing.
DON'T obstruct the ventilation of the equipment, for example with curtains or soft furnishings. Overheating will cause damage and shorten the life of the equipment.
DON'T use makeshift stands and NEVER fix legs with wood screws — to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.
DON'T allow electrical equipment to be exposed to rain or moisture.

ABOVE ALL
— NEVER let anyone especially children push anything into holes, slots or any other opening in the case — this could result in a fatal electrical shock.
— NEVER guess or take chances with electrical equipment of any kind. It is better to be safe than sorry.

Locations of remote control buttons

OUTSIDE BUTTONS



①	Mute button	p.12
②	Number buttons	p.9
③	ZOOM button	p.16
④	Hyper Sound button	p.12
⑤	Information button	p.9, 14
⑥	TV button	
⑦	Volume –/+ buttons	p.10
⑧	Standby button	p.8, 10
⑨	Colour buttons	
⑩	TV/text button	p.17
⑪	OK button	
⑫	PR channel ∨/∧ buttons	p.9
⑬	◀/▶/▼/▲ buttons	
⑭	Teletext/VCR control buttons	p.17
⑮	VCR/TEXT selector switch	

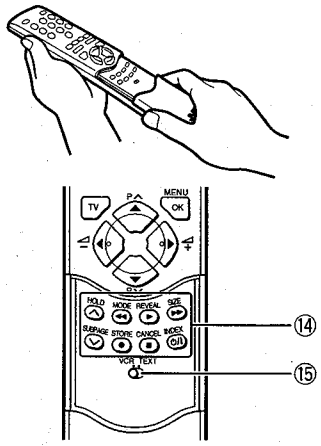
- When switched to the VCR side, the ⑭ buttons function as the JVC VCR control buttons.

Notes:
- For details on button functions, see the JVC VCR manual.
- Depending on your VCR, the remote control may not operate perfectly, and may not even control the VCR at all.

- When switched to the TEXT side, the ⑭ buttons function as teletext control buttons.

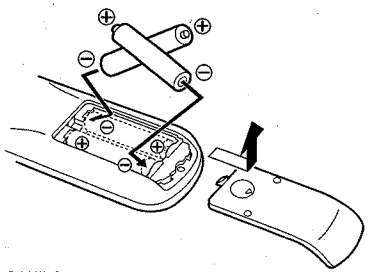
INSIDE BUTTONS

How to open the cover.



Inserting batteries into your remote control

Use two AAA/R03 dry cell batteries.
Insert two batteries, observing the ⊕ and ⊖ polarities, inserting the ⊖ end first.

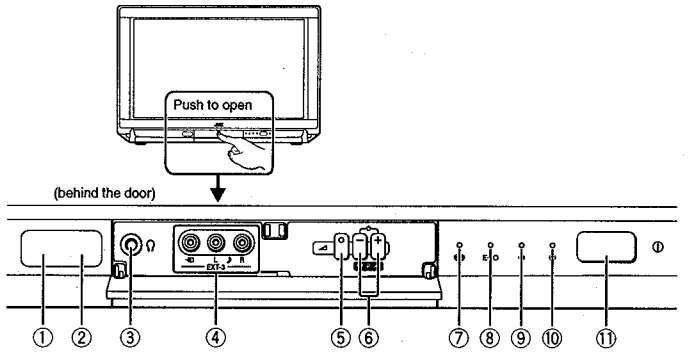


CAUTION:
- Follow the cautions printed on the batteries.

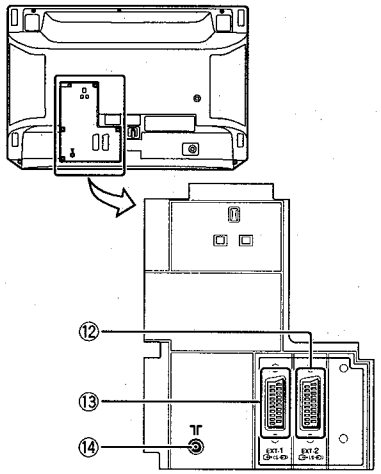
Notes:
- Battery life is approx. six months to one year, depending on frequency of use.
- If the remote control operates erratically, replace the batteries.
- We recommend that you use the supplied batteries temporarily and replace them as soon as operation becomes erratic. The supplied batteries are for operational testing of the remote control, not for regular use.

Locations of TV buttons and parts

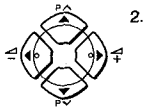
FRONT PANEL



REAR PANEL

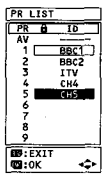


①	Remote control sensor	
②	ECO sensor	
③	Headphone jack (mini jack)	p.7
④	EXT-3 terminals	p.6, 19
⑤	Volume button (Press this button to display the volume level indicator. Press the ⑥ Up/down buttons to change volume while the volume level indicator is displayed.)	p.10
⑥	Up/down buttons (You can use this button as the ∨/∧ buttons of the PR channel. Pressing the ⑤ Volume button makes this button function as the Volume –/+ buttons.)	p.10
⑦	Hyper Sound lamp	p.12
⑧	ECO lamp	p.13
⑨	Sleep timer lamp	p.14
⑩	Power lamp	p.8, 10
⑪	Main power button	p.8, 10
⑫	EXT-2 terminal	p.6, 19
⑬	EXT-1 terminal	p.6, 19
⑭	Aerial socket	p.6



2. Press ▼/▲ button to select a PR channel.
   - Press ▶ button to view the next page of the PR LIST.
   - Press ◀ button to view the previous page of the PR LIST.

3. Press OK button.



Note:
- The 🔒 mark will appear on the PR channel when the CHILD LOCK setting is on (see page 15).

2. Press the Volume -/+ button.

The Volume level indicator appears and the volume changes as you press the Volume -/+ buttons.

Turning the TV and power off

1. Press the Standby button to turn the TV off.

⏻/I *The Power lamp changes from green to red.*
The TV enters standby mode.

2. Press the Main power button on the TV to turn the main power off.

⏻ *The Power lamp goes off.*

Note:
- To save energy, we recommend that you turn the main power off if you do not plan to use your TV for a long time.

To select a channel without using the remote control

You can also use the buttons on the front panel of the TV.

1. Press the Up/down button to turn your TV on.

The Power lamp changes from red to green.

Note:
- If your TV does not turn on, press the Main power button, and then press the Up/down button again.

2. Press the Up/down button to select the PR channel.

3. Adjust the volume.

1. Press the Volume button.
   The volume level indicator appears.
2. Press the Up/down button while the volume level indicator is displayed.

Note:
- PR channel selection is not available while the volume level indicator is displayed.

● To turn off your TV, press the Main power button.

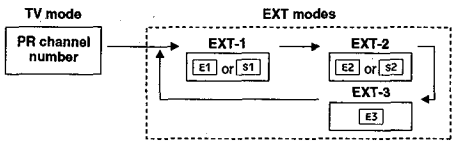
⏻ *The Power lamp goes off.*

Viewing images from external devices

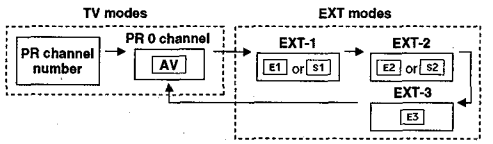
1. Repeatedly press the 0 button to select the EXT terminal.

0 AV *The current selection appears, and disappears after several seconds.*

When a station is not registered to the PR 0 (AV) channel, pressing the 0 button changes the selection as follows:



When a station is registered to the PR 0 (AV) channel, pressing the 0 button changes the selection as follows:



TV mode:
Shows images input from an external device (such as a VCR) or TV aerial connected to the aerial socket of your TV.

EXT modes:
Shows images input from an external device (such as a VCR) connected to the selected EXT terminal.
- To use S-Video mode to view input from an S-VHS VCR, see "To select S-VIDEO input for a terminal" on page 19. When selecting EXT-1 or EXT-2 input terminals as S-VIDEO input, E1 or E2 changes to S1 or S2 in the display.

Notes:
- If the picture is not clear or no colour appears, change the colour system manually (see page 13).
- When selecting an EXT terminal with no input signal, the EXT number and ID become fixed on screen.

SOUND AND PICTURE

MUTE

You can mute the volume to 0 instantly. This is convenient when answering the phone or when receiving visitors.

1. Press (Mute).

The sound is muted.

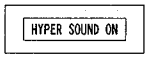
To restore the sound:
Press the Mute button again.

HYPER SOUND

You can enjoy sounds with a wider ambiance by Hyper sound.

1. Press (Hyper Sound).

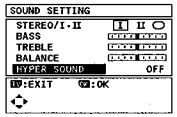
The HYPER SOUND ON appears.
- The Hyper Sound lamp lights.



To return to normal sound:
Press the Hyper Sound button again.

- HYPER SOUND can be also set to ON by operating MENU.

1. Press the OK button.
   The MENU appears.
2. Press ▼/▲ button to select SOUND SETTING, and press OK button.
   The SOUND SETTING menu appears.
3. Press ▼/▲ button to select HYPER SOUND.



4. Press ◀/▶ button to select ON, OFF.
5. Press the OK button.
   This completes the setting.
   - If you turned on HYPER SOUND, the Hyper Sound lamp lights.

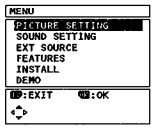
MULTI SOUND

You can select the multi sound mode for stereo broadcast programmes and bilingual programmes.

Note:
- The MULTI SOUND function has no effect on programmes other than A2 or NICAM broadcast programmes.

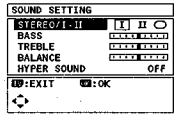
1. Press OK.

The MENU appears.



2. Press ▼/▲ to select SOUND SETTING, then press OK.

The SOUND SETTING menu appears.



3. Press ▼/▲ to select STEREO/I•II.

Notes:
- The multi sound mode display is different from the broadcast programme.
- The multi sound function does not work in EXT modes.
  The STEREO/I•II does not appear in SOUND SETTING menu.

4. Press ◀/▶ to select a multi sound mode.

CO : Stereo sound
I : Bilingual I (Sub I)
II : Bilingual II (Sub II)
O : Normal sound

5. Press OK.

This completes the setting.

Note:
- When you display the current PR channel number, the current multi sound mode appears for approximately 3 seconds.

TINT

You can choose from among three TINT modes.

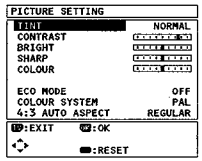
1. Press OK.

The MENU appears.

2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.

3. Press ▼/▲ to select TINT.



4. Press ◀/▶ to select a tint mode.

COOL:
A cool white colour base with a boost in the colour and contrast levels. Creating a more vivid picture.

WARM:
Use this mode when viewing film programmes.

NORMAL:
A normal white colour base with no boost in the colour or contrast levels.

5. Press OK.

This completes the setting.

COLOUR SYSTEM

The colour system is automatically selected, but if the picture is not clear or no colour appears, select the colour system manually.

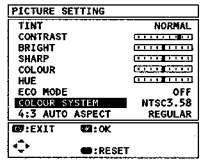
1. Press OK.

The MENU appears.

2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.

3. Press ▼/▲ to select COLOUR SYSTEM.



4. Press ◀/▶ to select the appropriate colour system.

PAL:
PAL system.

NTSC3.58:
NTSC 3.58 MHz system.

NTSC4.43:
NTSC 4.43 MHz system.

AUTO:
Automatic colour system selection.

Notes:
- Auto may not function properly depending on signal quality. If the picture is abnormal in AUTO mode, select another colour system manually.
- When in TV mode (PR 1 to PR 99), you cannot select AUTO, NTSC 3.58 or NTSC 4.43.
- When in TV mode (PR 0), you cannot select NTSC 3.58 or NTSC 4.43.

5. Press OK.

This completes the setting.

PICTURE/SOUND ADJUSTMENT

You can adjust the picture and sound as you like.

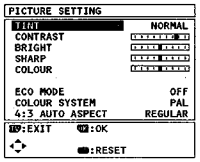
To adjust the picture

1. Press OK.

The MENU appears.

2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.



3. Press ▼/▲ to select an item, and press ◀/▶ to adjust it.

- To return to the default settings, press blue button.

◀	Item	▶
Lower	CONTRAST (picture contrast)	Higher
Darker	BRIGHT (picture brightness)	Brighter
Softer	SHARP (picture sharpness)	Sharper
Lighter	COLOUR (picture colour)	Deeper
Reddish	HUE (picture hue)	Greenish

Note:
- You can adjust the HUE (picture hue) only when the colour system is NTSC 3.58 or NTSC 4.43.

4. Press OK.

This completes the setting.

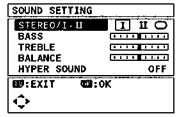
To adjust the sound

1. Press OK.

The MENU appears.

2. Press ▼/▲ to select SOUND SETTING, then press OK.

The SOUND SETTING menu appears.



3. Press ▼/▲ to select an item, and press ◀/▶ to adjust it.

◀	Item	▶
Weaker	BASS (low frequency sound)	Stronger
Weaker	TREBLE (high frequency sound)	Stronger
Left	BALANCE (audio balance)	Right

4. Press OK.

This completes the setting.

ECO MODE

When you set ECO MODE to ON, the screen contrast is automatically adjusted to a setting suitable for the brightness of your room.
This reduces eye strain and the power consumption of the TV.

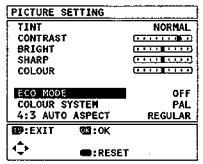
1. Press OK.

The MENU appears.

2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.

3. Press ▼/▲ to select ECO MODE.



4. Press ◀/▶ to select ON, OFF.

5. Press OK.

This completes the setting.
- If you turned on ECO MODE, the ECO lamp lights.

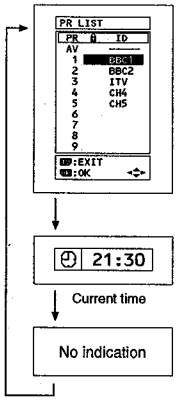
OTHER FEATURES

INFORMATION

You can display the PR LIST or the current time.

1. Press 0 (Information) repeatedly.

The display changes cyclically in the following order.



About PR LIST:

- Ten positions including the currently selected PR channel will be displayed as a list.
  Press ▼/▲ / ◀/▶ to select the desired PR channel. For details see page 9.

About the current time display:

This TV uses teletext data to determine the current time.

- If the TV has not received a station that has teletext data since it was turned on, the time display is blank. To view the current time, select a station that is broadcasting teletext data. As long as you do not turn off the TV, then even if you select other stations, the time will still be displayed.

SLEEP TIMER

You can set the TV to automatically turn off after a specified period of time.

Note:

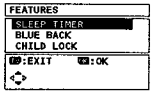
- The SLEEP TIMER does not turn off the Main power.

1. Press OK.

The MENU appears.

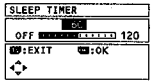
2. Press ▼/▲ to select FEATURES, then press OK.

The FEATURES menu appears.



3. Press ▼/▲ to select SLEEP TIMER, then press OK.

The SLEEP TIMER menu appears.



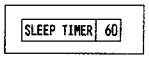
4. Press ◀/▶ to select a period of time.

You can set the period of time a maximum of 120 minutes in 10 minute increments.

OFF:
Turns off the SLEEP TIMER.

5. Press OK.

The selected period of time is displayed for approx. 3 seconds.



- The Sleep timer lamp lights if you set the SLEEP TIMER.

To display the remaining Sleep timer time:

Perform steps 1 to 3 to display the SLEEP TIMER menu, and press OK button when you finish checking the time.

To turn off the Sleep timer:

Perform steps 1 to 3 to display the SLEEP TIMER menu, press ◀ button to select "OFF", and then press OK button.

- The Sleep timer lamp goes out.

Note:

- One minute before the SLEEP TIMER turns off the TV, "GOOD NIGHT!" appears. Three seconds before the SLEEP TIMER turns off the TV, "JVC" is displayed on the screen.

BLUE BACK

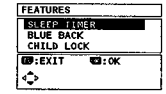
When viewing a PR channel with no or poor reception, or if there is no input from an external device, you can mute the sound and change the picture into a blue picture.

1. Press OK.

The MENU appears.

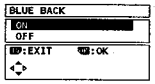
2. Press ▼/▲ to select FEATURES, then press OK.

The FEATURES menu appears.



3. Press ▼/▲ to select BLUE BACK, then press OK.

The BLUE BACK menu appears.



4. Press ▼/▲ to select ON or OFF.

5. Press OK.

This completes the setting.

CHILD LOCK

You can lock some PR channels to prevent your children from watching them.

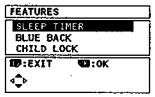
To set the CHILD LOCK

1. Press OK.

The MENU appears.

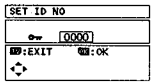
2. Press ▼/▲ to select FEATURES, then press OK.

The FEATURES menu appears.



3. Press ▼/▲ to select CHILD LOCK, then press 0 button.

The SET ID NO menu appears.

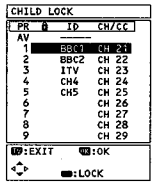


4. Enter the ID number.

1. Press ▼/▲ to select a number.
2. Press ◀/▶ to move the cursor.

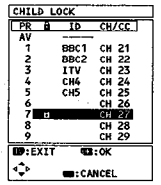
5. Press OK.

The CHILD LOCK menu appears.



6. Press ▼/▲ to select a PR channel, then press blue button.

The selected PR channel is locked.



- To cancel the CHILD LOCK: Press blue button again.
- Repeat step 6 to lock all PR channels which you want to lock.

7. Press OK.

This completes the setting.

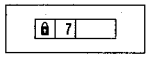
Notes:

- You cannot select a locked PR channel using the PR channel V/Λ buttons.
- Even if you can select a locked channel and display it, you can not view the programme of the locked channel.

To view a locked PR channel

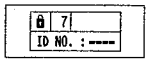
1. Select a locked PR channel.

- Use the number buttons to select the PR channel.
  The locked channel is displayed.



2. Press 0 (Information).

The ID NO. input menu appears.



3. Press the number buttons to enter the ID number.

You are now viewing the locked PR channel.

If you forget the ID number:

Perform steps 1 to 3 of "To set the CHILD LOCK". After you confirm the ID number, press the TV button to exit the menu.

DEMONSTRATION

The demonstration runs automatically and introduces the menus of this TV's main features.

1. Press OK.

The MENU appears.

2. Press ▼/▲ to select DEMO, then press OK.

The demonstration begins.

- To stop the demonstration, press any button on the remote control.

ZOOM

Select a ZOOM mode to change the picture format. You can enlarge the picture to fill the wide TV screen (16:9 aspect ratio). In addition, you can stretch a normal picture (4:3 aspect ratio) to fill the wide TV screen.

Notes:
- The picture format information of the present broadcasting programme may be received as WSS (Wide Screen Signalling). When AUTO mode is selected for ZOOM mode and the WSS signal is received, this TV automatically selects the optimum ZOOM mode corresponding to the WSS signal. However, in the case of weak WSS signal reception, this function may not work correctly. In this case, select the optimum ZOOM mode manually.
- If the EXT-1 terminal's input is from a picture signal with a 16:9 aspect ratio picture format, the ZOOM mode may automatically changes to FULL mode. This is because the TV detects an identification signal which is not an WSS signal.

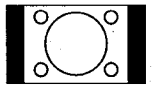
Manual ZOOM selection

You can select a ZOOM mode manually.

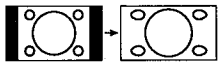
1. Press ZOOM repeatedly to select a ZOOM mode.

The picture expands.

REGULAR mode:
Use to view a normal picture (4:3 aspect ratio) unchanged.



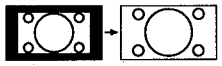
PANORAMIC mode:
Stretches the left and right sides of a normal picture to fill the screen, in a way that does not appear unnatural.



(PANORAMIC)

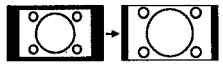
Note:
- In PANORAMIC mode, the top, bottom, left and right of the picture are slightly cut off.

16:9 ZOOM mode:
Use to expand a wide picture (16:9 aspect ratio).



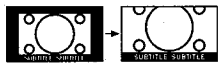
(16:9 ZOOM)

14:9 ZOOM mode:
Use to expand a picture with a 14:9 aspect ratio.



(14:9 ZOOM)

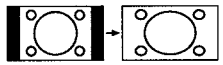
16:9 ZOOM SUBTITLE mode:
Use to expand a picture with a 16:9 aspect ratio having subtitles at the bottom of the screen.



(16:9 ZOOM SUBTITLE)

Note:
- In 16:9 ZOOM SUBTITLE mode, the top of the picture are slightly cut off.

FULL mode:
Uniformly stretches the left and right sides of a normal picture (4:3 aspect ratio) to fill the wide TV screen.



(FULL)

Note:
- For pictures with a 16:9 aspect ratio that have been squeezed into a normal picture (4:3 aspect ratio), select FULL mode to restore their original dimensions.

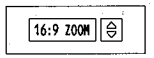
To move the picture vertically:

If you cannot see subtitles at the bottom of the screen, or if the top or bottom is cut off, move the picture vertically.

Note:
- You cannot move the picture vertically in AUTO, REGULAR and FULL mode.

1. Press ZOOM.

The current ZOOM mode is displayed.



2. Before the display disappears, press ▼/▲ to move the picture up or down.

△, ▽ :Default position
▲, ▼ :The picture is moved from default position.

Note:
- If you change the ZOOM mode, the picture returns to its default position.

Automatic ZOOM selection (AUTO mode)

You can set your TV to automatically select the optimum ZOOM mode to suit the picture format.

1. Press ZOOM repeatedly to select AUTO.

Your TV automatically selects the optimum ZOOM mode to suit the current programme's picture format.

Note:
- This function may not work correctly depending on the programme. In this case, select the optimum ZOOM mode manually.

To preset a ZOOM mode for the normal picture:

You can preset one of the three ZOOM modes, REGULAR, PANORAMIC or 14:9 ZOOM, as the ZOOM mode for the normal picture (4:3 aspect ratio).

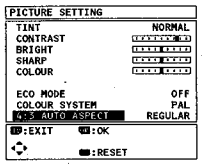
1. Press OK

The MENU appears.

2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.

3. Press ▼/▲ to select 4:3 AUTO ASPECT.



4. Press ▶ to select ZOOM mode.

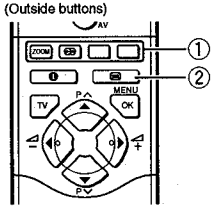
5. Press OK.

This completes the setting.

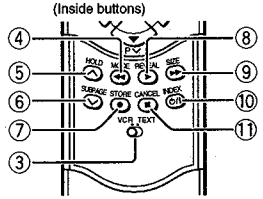
TELETEXT

Note:
- If you have trouble receiving teletext broadcasts, consult your local dealer or the teletext station.

(Outside buttons)



(Inside buttons)



① Colour buttons
② TV/text button
③ VCR/TEXT selector switch
- When this switch is set to the TEXT side, the following buttons function as the teletext control button.

④ MODE button
⑤ HOLD button
⑥ SUB PAGE button
⑦ STORE button
⑧ REVEAL button
⑨ SIZE button
⑩ INDEX button
⑪ DISPLAY CANCEL button

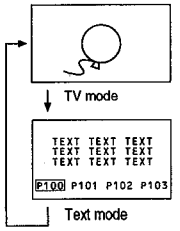
BASIC TELETEXT OPERATION

You can view two types of teletext broadcasts on the TV: Fastext and WST. The TV automatically recognizes the type of teletext broadcast.

Condition:
- The VCR/TEXT selector switch must already be set to the TEXT side.

1. Select a channel with a teletext broadcast.

2. Press (TV/text).



3. Select a page number.

Browse:
Press the PR channel V/Λ button on the remote control.

Direct selection:
Press the number buttons to enter a three-digit page number.

Colour button selection:
Press a colour button to select the corresponding page number on the bottom line of the screen.

Notes:
- Category names of teletext pages may appear instead of page numbers.
- In principle, ZOOM mode is fixed to FULL mode when you view Teletext programmes.
- Some Teletext programmes display a mixture of regular TV programmes and Text information. When viewing these Teletext programmes, pay attention to the following points.
  - Teletext pages cannot be selected with the Colour buttons. To change to other Teletext pages, select the Teletext page that you want to view with the Channel V/Λ buttons or number buttons.
  - ZOOM mode returns to the mode you selected before you started viewing Teletext programmes. If part of the Teletext information is missing at the top or bottom of the screen, press the ZOOM button to switch ZOOM mode to FULL mode or REGULAR mode.

● To return to TV mode, press the TV/text again.

Note:
- You can also return to TV mode by pressing the TV button.

DISPLAY CANCEL

You can search for a teletext page while watching TV.

1. Select a teletext page.

The TV searches for a teletext page.

2. Press DISPLAY CANCEL.

The TV programme appears.

When the TV finds the teletext page, its page number appears in the upper left of the screen.

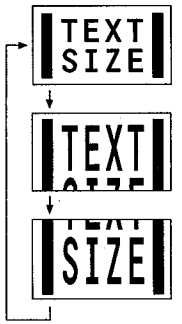
Note:
- If selecting something other than REGULAR or FULL mode for ZOOM mode, the page number does not appear on the screen.

3. Press (TV/text) when the page number is on the screen.

SIZE

You can double the height of the teletext display.

1. Press SIZE repeatedly.

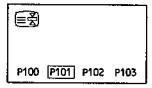


HOLD

You can hold a teletext page on the screen for a desired length of time, even while several other teletext pages are being received.

1. Press HOLD.

is displayed in the upper left of the screen, and the teletext page is held on the screen.



To release hold mode:
Press HOLD button again.

INDEX

Just press INDEX button to return to the index page.

1. Press INDEX.

Fastext/WST:
Returns to page 100 or a previously specified page.

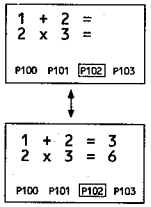
LIST mode:
Returns to the page number displayed in the lower left area of the screen.

REVEAL

Some teletext pages include hidden text (such as answers to a quiz).

1. Press REVEAL.

Each time you press REVEAL button, text is hidden or revealed.



LIST MODE

If you store the numbers of teletext pages you view often, you can quickly call up a desired teletext page whenever you like.

Note:
- You can store up to 64 pages in memory. You can store four pages in each channel from 1 to 15 (60 pages), and four pages that are the same for all channels above channel 15 (4 pages).

To store the page numbers

1. Press MODE to engage LIST mode.

Stored page numbers are displayed at the bottom of the screen.

2. Press a colour button, then enter the number of the teletext page.

To assign other pages to remaining colour buttons, repeat this operation.

3. Press and hold STORE.

The four page numbers blink white to indicate that they are stored in memory.

To call up a stored page

1. Press MODE to engage LIST mode.

Stored page numbers are displayed at the bottom of the screen.

To release LIST mode:
Press MODE button again.

2. Press a colour button to which a page has been assigned.

SUB PAGE

Some teletext pages include sub-pages that are automatically displayed. You can hold any sub-page, or view it at any time.

1. Call up a teletext page with sub-pages.

2. Press SUB PAGE.

3. Enter the number of the sub-page.

Example:
To select the 3rd sub-page, press number buttons "0", "0", "0", and "3".

Note:
- You can also select a sub page by pressing the red or green colour button.

OTHER PREPARATION

EXT SETTING

You can select S-VIDEO or normal input for the EXT-1 and EXT-2 terminals, and you can give an EXT ID to each EXT input terminal.

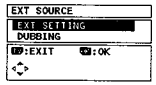
To select S-VIDEO input for a terminal

1. Press OK.

The MENU appears.

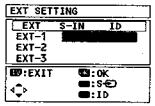
2. Press ▼/▲ to select EXT SOURCE, then press OK.

The EXT SOURCE menu appears.



3. Press ▼/▲ to select EXT SETTING, then press OK.

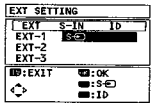
The EXT SETTING menu appears.



4. Press ▼/▲ to select an EXT input terminal.

5. Press yellow button.

The S-VIDEO input indication appears.
- To select normal input, press yellow button again.



- If you want to set an EXT ID here, perform the operation procedures from the step 4 in the next column.

6. Press OK.

The menu disappears.

To give an EXT ID to an EXT input terminal

1. Press OK.

The MENU appears.

2. Press ▼/▲ to select EXT SOURCE, then press OK.

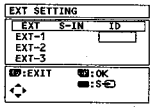
The EXT SOURCE menu appears.

3. Press ▼/▲ to select EXT SETTING, then press OK.

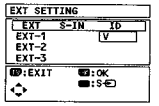
The EXT SETTING menu appears.

4. Press ▼/▲ to select an EXT input terminal.

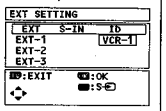
5. Press blue button.



6. Repeatedly press ▼/▲ to select a character.



7. Press ▶ to move the cursor forward.
- Pressing ◀ button moves the cursor backward.
- To cancel the operation, press the (Information) button.



8. Press OK.

Note:
- To erase EXT ID, reset the EXT ID to a blank space.

● This completes the procedure. Press the TV button to exit the menu.

DUBBING

Select output to a VCR or other device connected to the EXT-2 terminal. Note that you cannot output from the EXT-2 terminal when the TV is turned off.

Note:
- RGB signals from TV games and TELETEXT screens cannot be output from EXT-2 terminal.

1. Press OK.

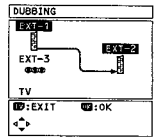
The MENU appears.

2. Press ▼/▲ to select EXT SOURCE, then press OK.

The EXT SOURCE menu appears.

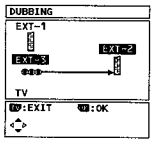
3. Press ▼/▲ to select DUBBING, then press OK.

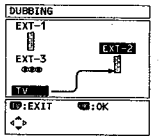
The DUBBING menu appears.



4. Press ▼/▲ to select the input which you want to output from EXT-2.

TV:
The sound and picture of the currently selected PR channel is output from EXT-2, so you can record the output on a VCR connected to the EXT-2 terminal while watching a video input from the EXT-1 or EXT-3 terminal.





5. Press OK.

The menu disappears.

LANGUAGE

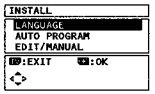
You can select one of ten languages for the on-screen display.

1. Press OK.

The MENU appears.

2. Press ▼/▲ to select INSTALL, then press OK.

The INSTALL menu appears.



3. Press ▼/▲ to select LANGUAGE, then press OK.

The LANGUAGE menu appears.

4. Press ▼/▲ to select a language.

5. Press OK.

This completes the setting.

AUTO PROGRAM

You can automatically allocate up to 99 stations to PR channels PR 1 to PR99 on this TV.
When the TV receives a signal describing the station's name, it allocates those stations, station IDs, and registers then as they were preset at the JVC factory.

1. Press OK.

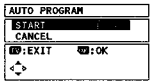
The MENU appears.

2. Press ▼/▲ to select INSTALL, then press OK.

The INSTALL menu appears.

3. Press ▼/▲ to select AUTO PROGRAM, then press OK.

The AUTO PROGRAM menu appears.



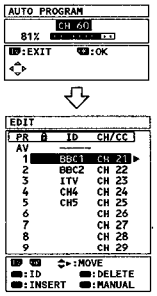
Note:

- If you make a mistake when selecting your country, or do not want to use the Automatic allocation function, select CANCEL, and then press OK button to return to the INSTALL menu.

4. Press OK.

The PR channel is automatically set and the EDIT menu is displayed.

- If you want to edit PR channels or allocate a station to PR0 (AV) channel, see page 21 "EDIT/MANUAL" for procedural description.



Note:

- If a station you want to view is not allocated to a PR channel, perform Manual allocation (see page 23).

● The procedure is complete. Press the TV button to exit the menu.

EDIT/MANUAL

You can change PR channel settings by doing any of the following:

- You can delete an unwanted station from a PR channel,
- You can change the PR channel number of a station,
- You can add station IDs to PR channels,
- You can add a new station to a PR channel, or
- You can manually allocate the desired station to a PR channel.

To edit PR channels

1. Press OK.

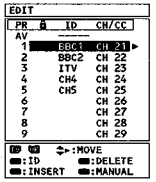
The MENU appears.

2. Press ▼/▲ to select INSTALL, then press OK.

The INSTALL menu appears.

3. Press ▼/▲ to select EDIT/MANUAL, then press OK.

The EDIT menu appears.

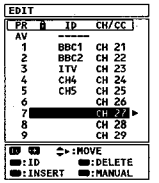


4. Use any of the procedures described in the following pages to change the PR channel settings.

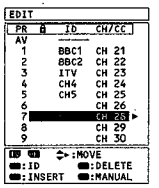
● This completes the procedure. Press the TV button to exit the menu.

To delete a station from a PR channel

1. Press ▼/▲ to select the station you want to delete.



2. Press yellow button.

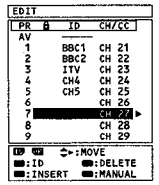


Note:

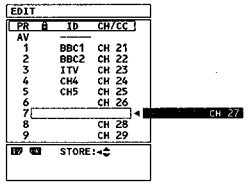
- Stations allocated to PR channels following the deleted PR channel number are shifted back by one to the preceding PR channel number.

To change the PR channel number of a station

1. Press ▼/▲ to select the station.

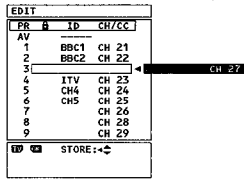


2. Press ▶.

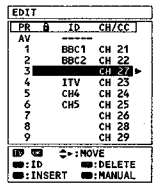


3. Press ▼/▲ to move the selected station to the desired PR channel number.

- To cancel the operation, press the 0 (Information) button

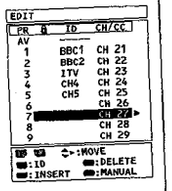


4. Press ◀.

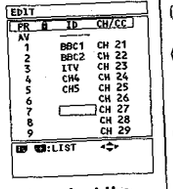


To add a station ID to a station

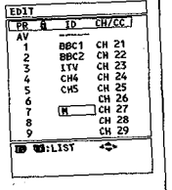
1. Press ▼/▲ to select the station.



2. Press red button.

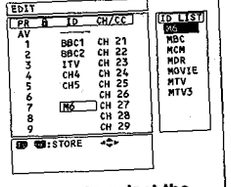


3. Press ▼/▲ to select the first letter of the desired station's ID.



4. Press OK.

The ID LIST appears.

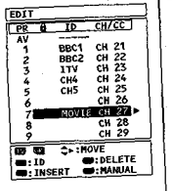


5. Press ▼/▲ to select the station ID.

- To cancel the operation, press the 0 (Information) button.

6. Press OK.

Returns to the EDIT menu.



Programming a station's ID manually:

Follow the operations below in place of steps 3 thru 5.

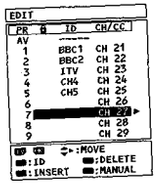
(1) Press the ▼/▲ button repeatedly to select a character.

(2) Press the ▶ button to move cursor to input position.
- Pressing the ◀ button moves the cursor backward.

(3) To complete station ID, follow steps (1) and (2) repeatedly.
- A station ID can have up to 5 characters.

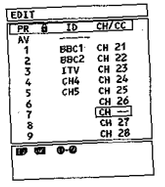
To add a new station to a PR channel

1. Press ▼/▲ to select the row containing the PR channel number to which you want to add a station.



2. Press green button.

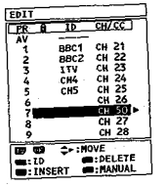
- To cancel the operation, press the 0 (Information) button.



Note:
- For details on the relationship between the displayed CH number and the actual channel number, see the Channel table on page 25.

3. Press the number buttons to enter the channel number.

- To enter a one-digit channel number, enter the corresponding number and press OK button.

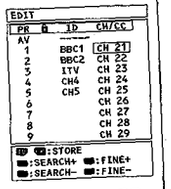


Note:
- When you add a station, the station preset to PR99 is deleted.

To manually allocate a station to PR channel (Manual allocation)

1. Press blue button.

Your TV enters the Manual allocation mode.



2. Press ▼/▲ to select a PR channel number.

Note:
- PR channel number "AV" appears on the screen as PR 0 channel. We recommend that you allocate this PR channel to a VCR connected to the aerial socket.

3. Press green or red button to search for a station.

Scanning stops when the TV receives a broadcast.
Press green or red button to search for another station, and keep searching until you see the station you want.

If reception is poor:
Press the blue or yellow button to fine-tune the station.

Note:
- For details on the relationship between the displayed CH number and the actual channel number, see the Channel table on page 25.

4. Press OK.

The station is allocated to a PR channel.

TROUBLESHOOTING

- If the plug is disconnected from the AC socket, or the TV aerial has problems, you may think there is a problem with the TV itself. Be sure to check the following before calling for service.

IMPORTANT

- Review all instructions in this manual.

	Problem	Action
■ GENERAL	No power supply.	Insert the plug in an AC socket. Press the Main power button (see page 8).
	No picture or sound.	Check aerial connections (see page 6). Press the number 0 button to select the correct mode (see page 11). Select the correct colour system manually (see page 13).
	The power shuts off automatically.	Press the Standby button to turn the power on again (see page 8).
	Inoperable remote control.	Replace the batteries (see page 4). Insert the batteries correctly (see page 4). Use the remote control within about 7 metres of the TV.
■ PICTURE	Poor colour.	Adjust COLOUR and BRIGHT (see page 13). Select the correct colour system manually (see page 13).
	The screen mode suddenly changed.	The ZOOM mode's automatic selective function is working (see page 16).
	Lines or streaks in picture (interference).	Move the components apart until the interference is eliminated. Reposition the aerial.
	Spots (crosstalk).	Reposition the aerial. Replace with an aerial with better directionality.
	Double pictures (ghosts).	Reposition the aerial. Replace with an aerial with better directionality.
	Snowy pictures (noise).	Check aerial connections. Redirect the aerial. Replace or repair the aerial.
	The screen turns blue.	The BLUE BACK function is on (see page 14).
■ SOUND	No sound from the TV's speakers.	Disconnect the headphones.
	No stereo sound.	Change STEREO/I•II to ⊙⊙ (stereo sound) mode (see page 12).
	No "SUB-I" or "SUB-II" sound in a multisound broadcast.	Change STEREO/I•II to the correct mode (see page 12).
■ TELETEXT	No teletext reception.	Tune to a teletext broadcast channel (see page 17). We recommend that you not videotape teletext, as it may not be recorded correctly.
	The current time is not displayed.	Tune to a teletext broadcast channel (see page 14).

The following are normal and are NOT malfunctions:

- When you touch the CRT surface, you might feel a slight charge of static electricity. This is because the CRT contains static electricity; it does not affect the human body.
- The TV may emit a crackling sound due to a sudden change in temperature. There is no problem unless the picture or sound is abnormal.
- When a bright a still image (of a white dress, for example) appears on the screen, the image may be coloured. This problem occurs in all CRTs, and as the bright image disappears, such colouration also disappears.
- This TV is equipped with a microcomputer that may operate abnormally due to interference from external components. If this happens, turn off the main power and disconnect the power cord from the AC socket. Then reconnect the power cord to AC socket and turn on the main power again.

Channel table

- The following table shows the relationship between the displayed CH channel number and the actual channel number.

CH --	Channel	CH --	Channel	CH --	Channel	CH --	Channel
CH 21	E21	CH 34	E34	CH 47	E47	CH 60	E60
CH 22	E22	CH 35	E35	CH 48	E48	CH 61	E61
CH 23	E23	CH 36	E36	CH 49	E49	CH 62	E62
CH 24	E24	CH 37	E37	CH 50	E50	CH 63	E63
CH 25	E25	CH 38	E38	CH 51	E51	CH 64	E64
CH 26	E26	CH 39	E39	CH 52	E52	CH 65	E65
CH 27	E27	CH 40	E40	CH 53	E53	CH 66	E66
CH 28	E28	CH 41	E41	CH 54	E54	CH 67	E67
CH 29	E29	CH 42	E42	CH 55	E55	CH 68	E68
CH 30	E30	CH 43	E43	CH 56	E56	CH 69	E69
CH 31	E31	CH 44	E44	CH 57	E57		
CH 32	E32	CH 45	E45	CH 58	E58		
CH 33	E33	CH 46	E46	CH 59	E59		

SPECIFICATIONS

Item \ Model	AV-24WT2EK	AV-28WT2EK
TV RF systems	CCIR I	
Colour systems	PAL (NTSC 3.58 / 4.43 MHz only in EXT modes)	
Channels and frequencies	E21-E69	
Sound-multiplex systems	NICAM system	
Teletext systems	Fastext (United Kingdom system) / WST (standard system)	
Power requirements	AC 220 – 240 V, 50 Hz	
Power consumption	Maximum 136 W, Average 111 W, Standby 1.5 W	Maximum 140 W, Average 121 W, Standby 1.5 W
Picture tube size	Visible area 56 cm (measured diagonally)	Visible area 66 cm (measured diagonally)
Audio output	Rated Power output 5 W + 5 W	
Speakers	3 x 10 cm oval x 2	10 cm round x 2
External input / output	EXT-1, EXT-2 21-pin Euroconnector (SCART)	
	EXT-3 VIDEO IN (RCA) AUDIO L / R IN (RCA)	
	Headphone jack (stereo mini jack, dia. 3.5 mm)	
Dimensions (W x H x D)	645 mm x 427 mm x 443 mm	716 mm x 489 mm x 496 mm
Weight	23.0 kg	32.9 kg
Accessories	Remote control unit RM-C794 x 1 AAA (R03) dry cell battery x 2	

Design and specifications subject to change without notice.

Pictures displayed on the screen using this TV's image-processing functions should not be shown for any commercial or demonstration purpose in public places (tearooms and halls in hotels, etc.) without the consent of the owners of copyright of the original picture sources, as this constitutes an infringement of copyright.